

② BLUE

Work Order ID 62599

October 5, 2010 10:28:17 AM



Page 1

Item ID: D206-667-103BL

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Fwd, Blue

Start Date: 10/05/10 Start Qty: 1.00



Cust Item ID:

Required Date: 10/19/10 Req'd Qty: 1.00

Customer:

Reference:

Run Start



Approvals: Process Plan: CZ Date: 10/10/05 Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
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D206-667-143	C
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B62599 D206-667-103

100



DC

DOCUMENT CONTROL

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D206-667-103 CHG004

8/10/10/28

110



Pick Kit
Packaging

0.00

Packaging

Memo

0.00

Packaging

EZ 10-10-18

120



BENDING MACHINE - CROSSTUBES

0.00

CNC Bend 2

Memo

0.00

CNC Alpha 160 Bender

Bend tube as per Dwg D206-667-143 using CNC bender program

EZ 10-10-18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

QC15- Crosstube Dimensional Check

0.00



QC

Memo

0.00

Quality Control

1

10-10-10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Page 3

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Cust Item ID:

Required Date: 10/19/10 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____


Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140  Crosstubes	Crosstubes	0.00							
	Memo	0.00							
	1-Drill holes & ream using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill all (3) top holes.								
	3-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins.								
	4-Drill pilot holes using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill only the top (2) holes.								
	5-Drill pilot holes as per Dwg D206-667-143. Drill only the top (2) holes.								
	6-Drill Fwd rivet holes using drill Jig DT8787FWD as per Dwg D206-667-143. Note: Fwd side has 3x top holes.								
	7-Drill Aft rivet holes using drill Jig DT8787AFT as per Dwg D206-667-141.								
	8-C'sink holes as per Dwg D206-667-143. Allow rivet to sit below surface to compensate for paint.								
	9 -Scribe part # and batch # using vibrating stylus as per Dwg D206-667-143 Inside of Cuff(Donot engrave on outside of tube)								
	10-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D206-667-143								

Drill holes to 0.53 per Dim sheet

SAD
10-10-18

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Page 4

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

SAD
10-10-20

①

Hand Finishing Crosstubes

160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

1

10/10/20

Quality Control

170

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

COFFS
drilled to 0.53. ✓

1

10/10/20

Quality Control

W/O:		WORK ORDER CHANGES					
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QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180 	Outsource process - NDT per QSI038 4.1	0.00							
Outsource2	Memo	0.00							
Outsource process - NDT	CROSSTUBES								
190 	Packaging	0.00							
Packaging	Memo	0.00							
Packaging	Ensure copy of NDT results attached to work order.								
200 	QC5- Inspect part completeness to step on W/O	0.00							
QC	Memo	0.00							
Quality Control									

CZ 10/10/21 ①

P 10/10/21 ①

ml 10 10 25 ①

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Page 6

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Required Date: 10/19/10 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

210

0.00



SprayPaint

SprayPaint

Memo

0.00

1-Prime inside and outside crosstube as per QSI 005 4.2

B 114424

2-Paint outside crosstube with ~~White~~ Deflect as per QSI 005 4.2

PRIME:

Start Time: 9:30

Finish Time: 10:30

Deflect Blue B 115509

Clear Deflect B 115506

PAINT:

Start Time: 2:30

Finish Time: 3:30

ml 10 10 25 (1)

W 101005

220

0.00



QC14- Inspect Spray Paint

QC

Memo

0.00

Wrap in plastic bag to protect from scratches

Re 10 - 10 - 26

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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October 5, 2010 10:28:17 AM



Page 7

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Required Date: 10/19/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

230

0.00



Crosstubes

Crosstubes

Memo

0.00

1-Install support using 0.03" to 0.06" thick layer of magnobond 6398 per QSI 015. Let cure for 12h after installation and prior to packaging. Note: (2) Aft holes should be facing up.
A/R Magnobond 6398: 114158 exp: 01/2011

2-Install supports and clamps as per Dwg D206-667-143. Torque clamps to 80-100 in lb 10 10 27

3-Install nut plates as per Dwg D206-667-143. Touch-up rivet heads with Imron paint.

m 10 10 26 (1)

240

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

8 10/10/27

(X)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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NOTE: Date & initial all entries

October 5, 2010 10:28:17 AM



Accept

**Setup Start**

Stop

**Cust Item ID:**

Author's address: Department of Psychology, University of California, San Diego, La Jolla, CA 92037, USA.
E-mail: jacob@ucsd.edu

Customer:

Reference:

Run Start



Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

**Insp.
Stamp**

0.00



Packaging

Memo

0.00

Packaging

0.00



QC

Memo

0.00

Quality Control

0.00

270



Packaging

Packaging

0.00

Memo

Identify and pack for shipping as per PPP D206-667-103

Location: 114

PPP Rev: 5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Page 9

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

280

QC21 - Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10/10/28 JF
MF
10-10-28

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

Picklist Print

Page 1

October 5, 2010 10:28:16 AM

Work Order ID: 62599

Parent Item: D206-667-103BL

Parent Item Name: Crosstube Fwd, Blue

Start Date: 10/05/10

Required Date: 10/19/10

Start Qty: 1.00

Required Qty: 1.00

Comments: IIP RevA: new issue DD .09.11.23 verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	----------------	--------------	---------------	----------------	--------

D206-667-103TRN

Manufactured

No

110

Each

2.0000

1

1



Crosstube Turning DetailL

Location

Loc Qty

Loc Code

LG

2

61426

1

61428

1

D2873-043

Manufactured

No

230

Each

16.0000

2

2



Nut Plate Assembly

Location

Loc Qty

Loc Code

ST

16

60981

16

D2873-045

Manufactured

No

230

Each

14.0000

2

2



Nut Plate Assembly

Location

Loc Qty

Loc Code

LG

14

60982

14

D2891-1

Manufactured

No

230

Each

53.0000

2

2



2.25 Support

Blue

Location

Loc Qty

Loc Code

LG

53

46159

7

50952

18

53773

20

55786

8

4

EL 10-10-10

MR 10-10-26

MR 10-10-26

MR 10-10-26

W/O:		WORK ORDER CHANGES					
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Work Order ID: 62599



Parent Item: D206-667-103BL



Parent Item Name: Crosstube Fwd, Blue

Start Date: 10/05/10

Required Date: 10/19/10

Start Qty: 1.00

Required Qty: 1.00

D3595-063-395 Manufactured No

230 Each

14.0000

4 4



RUBBER CUSHION

Location

Loc Qty

Loc Code

FP

10

44667

10

ST

4

60585

4

cut (4)0.063" X 3.95"

MS20601-AD4W8 Purchased No

230 Each

174.0000

14 14



RIVET

Location

Loc Qty

Loc Code

ST322

174

108521

70

112203

104

MS21920-20 Purchased No

230 Each

85.0000

4 4



Clamp (per MIL-DTL-8783C)

Location

Loc Qty

Loc Code

LG

85

112624

2

114687

1

114779

6

115057

26

115736

50

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Parent Item Name: Crosstube Fwd, Blue

Start Date: 10/05/10

Required Date: 10/19/10

Start Qty: 1.00

Required Qty: 1.00

AN5-30A

Purchased

No

250

Each

78.0000

4

4



BOLT



10/10/2781

Location

Loc Qty

Loc Code

ST339

78

112933

3

114437

25

114941

50

AN5-32A

Purchased

No

250

Each

300.0000

4

4



Bolt



10/10/2781

Location

Loc Qty

Loc Code

ST340

300

114056

40

114405

50

115016

50

115108

50

115589

60

115698

50

AN5-7A

Purchased

No

250

Each

139.0000

10

10



Bolt



10/10/2781

Location

Loc Qty

Loc Code

ST337

139

113149

139

10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Start Date: 10/05/10

Required Date: 10/19/10

Start Qty: 1.00

Required Qty: 1.00

AN9601D516 NAS1149D0563J Purchased

No

250

Each

34.0000

18

18



Washer



11/14/10 10/10/10

Location

Loc Qty

Loc Code

ST

34

103694

18

107534

12

109287

4

AN970-4

Purchased

No

250

Each

86.0000

12

12



Washer



10/10/10

Location

Loc Qty

Loc Code

ST349

86

115531

36

115621

50

MS21042L5

Purchased

No

250

Each

899.0000

4

4



Nut



10/10/10

Location

Loc Qty

Loc Code

ST139

26

114813

26

ST300

873

115156

373

115594

500

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

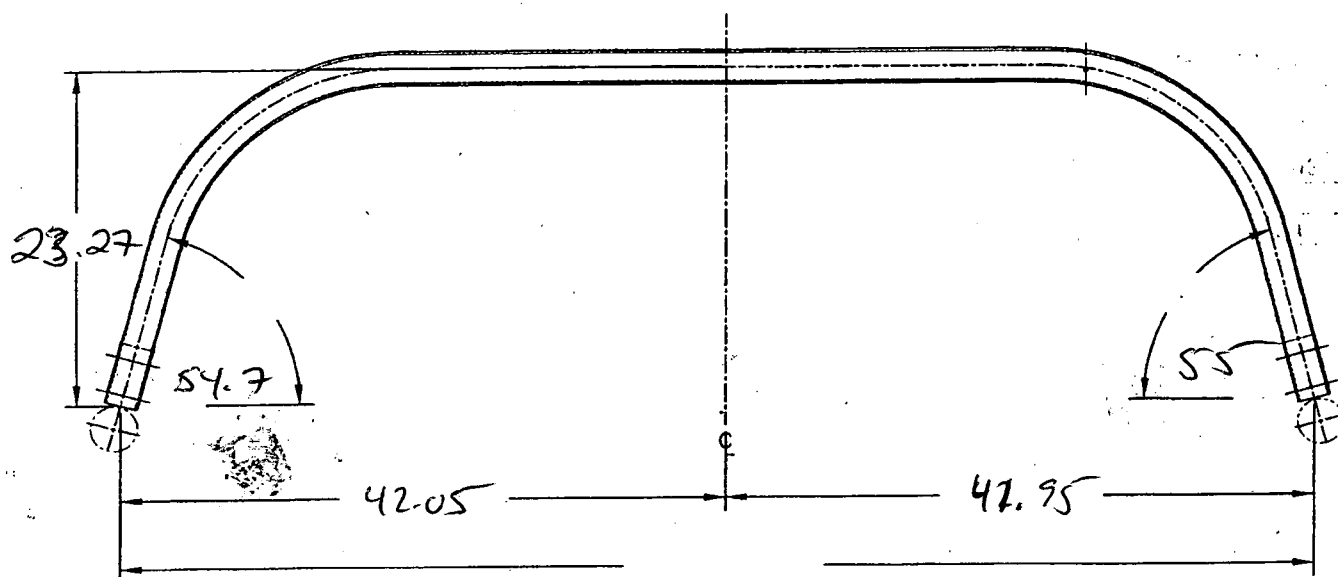
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DART AEROSPACE LTD	Work Order:	62599
Description: Crosstube High Fwd (206L)	Part Number:	D206-667-103
Inspection Dwg: D206-667-143 Rev: C		Page 1 of 1

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	41.79	42.05
Angle	54	56
Total Span	83.58	84.10



Comments
Height acceptable when curk's drilled to 0.53" per view B-B.

QC15 Inspection	
Date	10/10/10

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.06.26	Dimensions updated per Dwg Rev C	KJ	
C	09.10.22	Minimum height dimension revised	KJ	

Item	Qty -143	Part Number	Description
1	X	D206-667-143	CROSSTUBE ASSEMBLY (206L HIGH FWD)
2	1	D6002-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

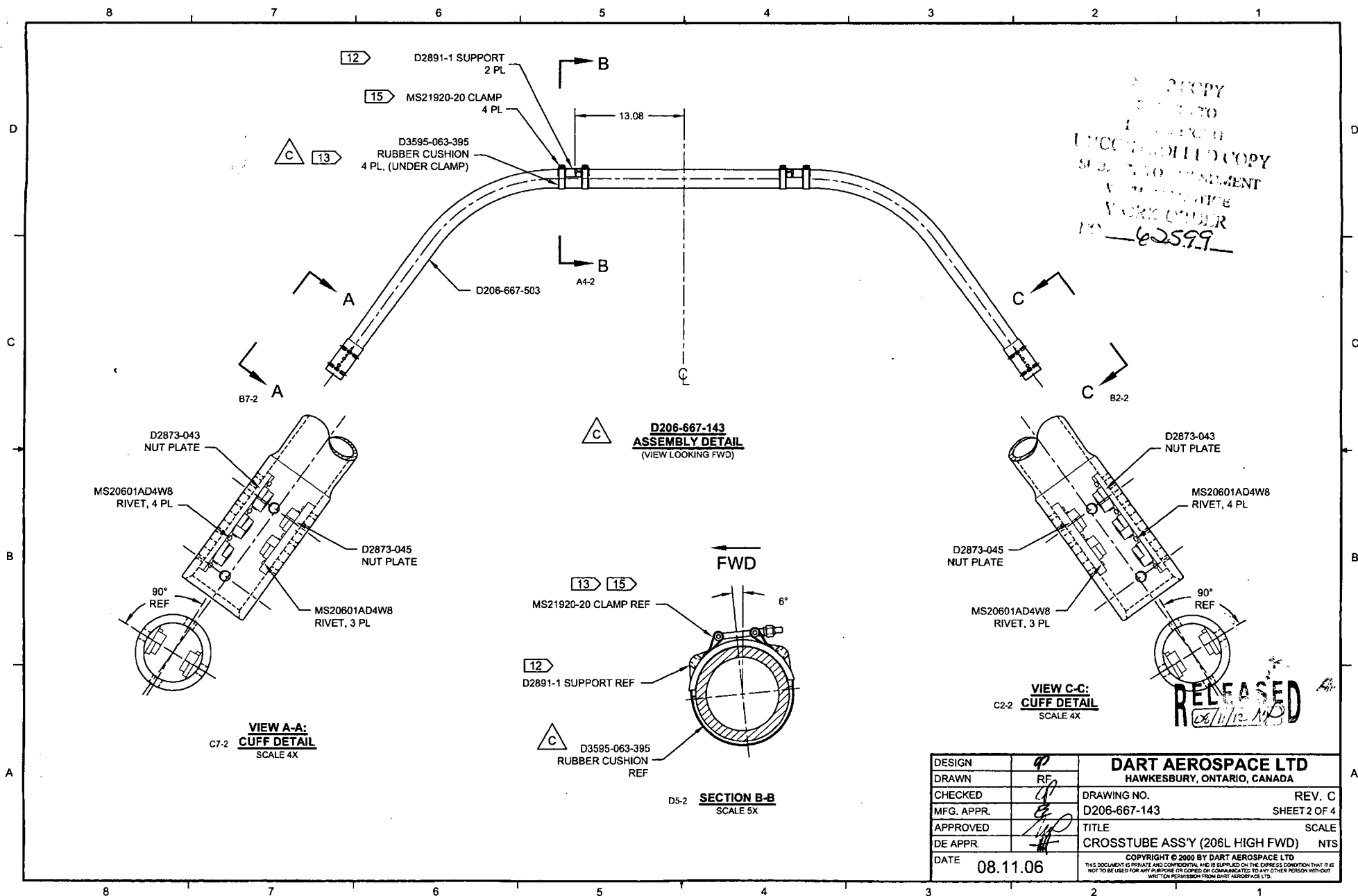
GENERAL NOTES:

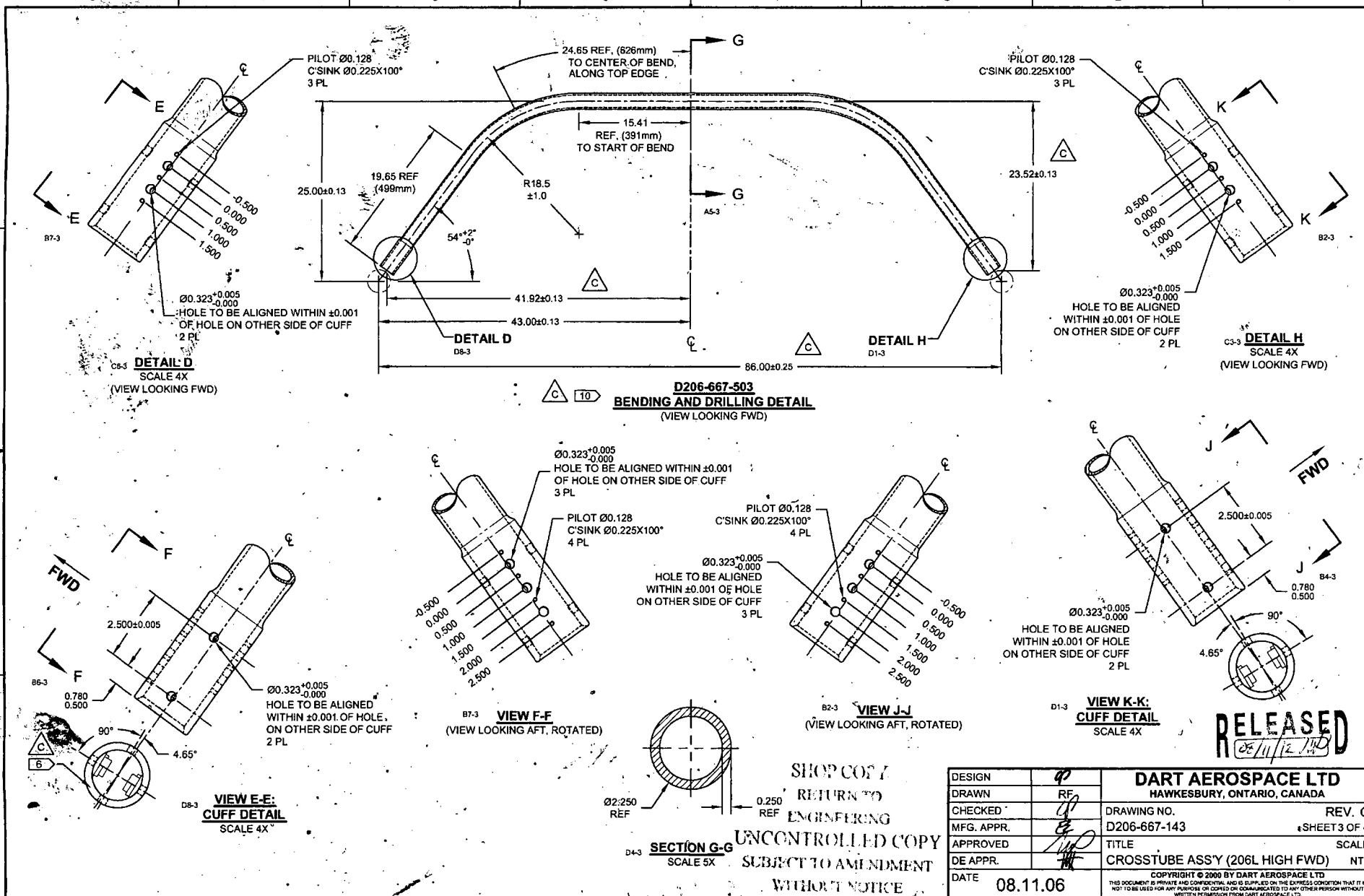
- 1) MATERIAL: MANUFACTURED FROM D6002-115
FINISHED LENGTH = 104.98±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-143" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 15.5 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

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NO. 62599
CX1010/05

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C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2856-400-694 (ZN D6-2 & A5-2); REMOVED REF. & ADD TOLERANCE (ZN D3-3, C4-3, C5-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. C
MFG. APPR.	RF	D206-667-143	SHEET 1 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	CROSSTUBE ASS'Y (206L HIGH FWD)	NTS
DATE	08.11.06	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

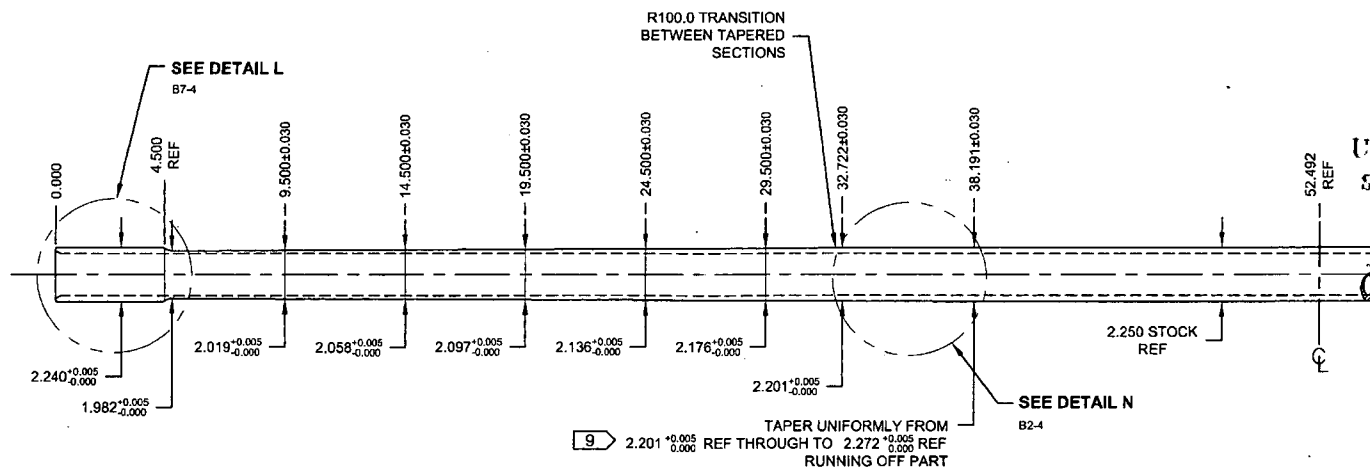




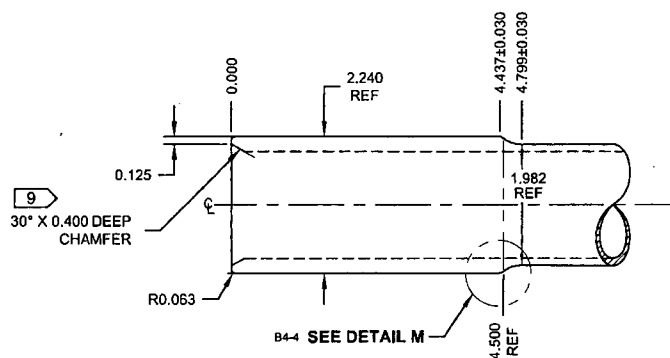
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DRAWN	RF	HAWKESBURY, ONTARIO, CANADA
CHECKED	8	DRAWING NO. REV. C
MFG. APPR.	8	D206-667-143 SHEET 3 OF 4
APPROVED	8	TITLE SCALE
DE APPR.	8	CROSSTUBE ASS'Y (206L HIGH FWD) NTS
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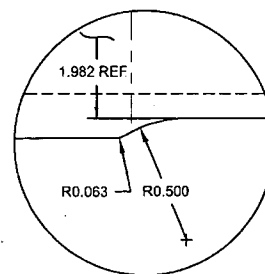
WORK ORDER
NO. 62597



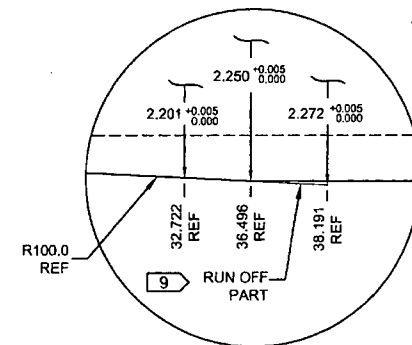
C TURNING DETAIL



DETAIL L:
D7-4 **CROSSTUBE CUFF**
NOT TO SCALE



DETAIL M:
A6-4 **CUFF TRANSITION**
NOT TO SCALE



DETAIL N:
C4-4 **TAPER RUN-OFF**
NOT TO SCALE

RELEASED
68/11/12/10

DESIGN	9	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	JP	DRAWING NO.	REV. C
MFG. APPR.	JP	D206-667-143	SHEET 4 OF 4
APPROVED	JP	TITLE	SCALE
DE APPR.	JP	CROSSTUBE ASS'Y (206L HIGH-FWD)	NTS
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Change Record

Part Number D206-667-103

Description	CROSSBRED IN'S MAXIM (206 L HIGH FOD)
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Page 1 of 1

[illegible]

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



LIQUID PENETRANT TEST REPORT

P- 15031

PAGE 1 OF 1

CLIENT Dart Aerospace DATE Oct 21st 2010 TIME AM ☒ PM ☐
ATTENTION Linde Lacelle ACUREN JOB NO. 188-10-0927
ADDRESS 1270 Aberdeen St. PO/WO No. 17783
Hawkesbury WORK LOCATION Hawkesbury
ACCEPTANCE STD. ASTM 1417/1051-03E REV./DATE 2005
PROJECT x-tubes # D206-667-203BL and D206-667-103BL
ITEM(S) EXAMINED Job #'s: 62598, 62599, 62602, 62605, 62606, 62607

JOB DESCRIPTION PROCEDURE No. LT- REV./DATE TECHNIQUE No. LT- REV./DATE
PART No. D206-667-203BL, D206-667-103BL MATERIAL ALODINED ALUM THICKNESS N/A
SCOPE WET FLOURESCENT LIQUID PENETRANT INSPECTION CARRIED OUT ON 100% EXTERNAL SURFACE OF X-TUBES

TEST DETAILS

METHOD ☒ FLUORESCENT ☐ VISIBLE ☒ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMULSIFIED
FAMILY BRAND MAGNAFLUX BLACK LIGHT S/N 8178 ☒ OUTPUT > 1000 μ W/cm² ☐ AMBIENT < 2 fc
PENETRANT ZL67 MINIMUM DWELL TIME 4045 MIN. LIGHTING EQUIP. ☒ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER H2O MINIMUM DRY TIME >10 MIN. OTHER CHL Oct 15th 2010
DEVELOPER S&D52 MINIMUM DWELL TIME 10 MIN. LIGHT METER S/N CAL DUE DATE Apr 30 11
DEVELOPER TYPE ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY

TEST SURFACE

SURFACE CONDITION ☐ AS GROUND ☐ AS WELDED ☒ MACHINED ☐ SHOT BLASTED ☒ CLEAN BARE METAL
SURFACE TEMPERATURE ☐ < -4°C/ 20°F ☐ -4°C/ 20°F TO 10°C/50°F ☒ 10°C/50°F TO 52°C/125°F ☐ > 52°C/125°F

RESULTS- ☐ METRIC ☐ IMPERIAL

WET FLOURESCENT LIQUID
PENETRANT INSPECTION
CARRIED OUT ON 100%
EXTERNAL SURFACE ON X-TUBES:
Job #'s: 62598: ACCEPTABLE
62599: ACCEPTABLE
62602: ACCEPTABLE
62605: ACCEPTABLE
62606: ACCEPTABLE
62607: ACCEPTABLE

10 10 25

Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

When performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE Ian Tiley DTR # E-63200
TECHNICIAN (SIGNATURE): FREDERICK CHAGNON REPORT REVIEWED BY: NAME INITIALS
NAME (PRINT): FREDERICK CHAGNON
CGSB LEVEL I SNT LEVEL II CGSB LEVEL II SNT LEVEL II
CGSB REG. No 10560 CGSB REG. No 10560